

Title (en)
PROVIDING EFFICIENT FLOATING-POINT OPERATIONS USING MATRIX PROCESSORS IN PROCESSOR-BASED SYSTEMS

Title (de)
BEREITSTELLUNG VON EFFIZIENTEN GLEITKOMMAOPERATIONEN UNTER VERWENDUNG VON MATRIXPROZESSOREN IN PROZESSORBASIERTEN SYSTEMEN

Title (fr)
FOURNITURE D'OPÉRATIONS À VIRGULE FLOTTANTE EFFICACES À L'AIDE DE PROCESSEURS MATRICIELS DANS DES SYSTÈMES BASÉS SUR UN PROCESSEUR

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Application
EP 18779113 A 20180831

Priority

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- US 2018049098 W 20180831

Abstract (en)
[origin: US2019065146A1] Providing efficient floating-point operations using matrix processors in processor-based systems is disclosed. In this regard, a matrix-processor-based device provides a matrix processor comprising a positive partial sum accumulator and a negative partial sum accumulator. As the matrix processor processes pairs of floating-point operands, the matrix processor calculates an intermediate product based on a first floating-point operand and a second floating-point operand and determines a sign of the intermediate product. Based on the sign, the matrix processor normalizes the intermediate product with a partial sum fraction of the positive partial sum accumulator or the negative partial sum accumulator, then adds the intermediate product to the positive sum accumulator or the negative sum accumulator. After processing all pairs of floating-point operands, the matrix processor subtracts the negative partial sum accumulator from the positive partial sum accumulator to generate a final sum, then renormalizes the final sum a single time.

IPC 8 full level
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Citation (search report)
See references of WO 2019046722A1

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US 10747501 B2 20200818; **US 2019065146 A1 20190228**; CN 111033462 A 20200417; CN 111033462 B 20230825; EP 3676698 A1 20200708; EP 3676698 B1 20220223; TW 201921264 A 20190601; TW I772506 B 20220801; WO 2019046722 A1 20190307

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